STATEMENT OF LEGAL AND FACTUAL BASIS

Norfolk and Western Railway Company - East End Shops
Roanoke, Virginia
Permit No. VA-20468
Permit Date: October 7, 2003
AFS ID No. 51-161-0083

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Norfolk and Western Railway Company has applied for a Title V Operating Permit for its Roanoke facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

FACILITY INFORMATION

Permittee	Facility
Norfolk and Western Railway Company 110 Franklin Road, S.E. Roanoke, Virginia 24019	Norfolk and Western Railway Company – East End Shops Along East Campbell Avenue Roanoke, Virginia

Prepared By: Gail Taber Steele / Revision : Pamela J. Derk - Environmental Engineer

SOURCE DESCRIPTION

SIC Code: 4011 - Norfolk and Western Railway Company operates a rail car and locomotive maintenance facility known as the East End Shops, which has been in existence since the 1880's. Operations are divided into three major departments, each with its own personnel, management and facilities: the Car Shop, Locomotive Shop and Signal Shop. Other operations associated with the maintenance and repair facilities include the coal-fired steam plant, laboratory and storage tanks.

The facility is by definition a Title V major source due to potential emissions of criteria pollutants PM-10, sulfur dioxide, nitrogen oxides, volatile organic compounds and carbon monoxide in excess of 100 tpy. It is located in an attainment area for criteria pollutants, and is a PSD major source. The facility has been previously permitted under a number of minor NSR permits:

- Railcar painting and coating permit (41-01, 41-02, 41-04, 41-05) issued on June 30, 1995 and amended on January 19, 1996 & 6/14/01 (which superseded October 5, 1979 and June 3, 1993 permits);
- Shot blast booth permit (29-06) issued on February 27, 1998;
- Spray booth permit (42-04) issued on March 10, 1998 (amended 6/13/01);
- Sand handling and mold making permit (51-09, 51-10, 51-19, 51-20) issued on May 4, 1998 (amended 7/16/03);
- Shot blast booth permit (51-11) issued on May 8, 1998;
- Burnoff oven (incinerator) permit (29-02) issued on May 20, 1998;
- Spray booth permit (51-01) issued on December 18, 1998;
- Shot blast booth permit (37-01) issued on January 26, 1999; and
- Spray booth permit (29-01) issued on September 27, 1999 (amended 6/15/01)

In addition, the facility has previously received one PSD permit:

- PSD permit (Boilers 8-01 through 8-04) issued on April 2, 1984 (which consolidated and superseded May 12, 1980 state permit and July 14, 1980 EPA permit). This permit was reissued on 6/18/01.

All four boilers predate NSPS Subpart Dc applicability. One spray booth (51-01) is subject to the recordkeeping requirements (only) of a MACT regulation, 40 CFR 63 Subpart JJ, as its throughput is limited to the level of an "incidental wood furniture manufacturer" according to the definition in that regulation.

COMPLIANCE STATUS

The facility is inspected twice a year and is currently considered in compliance.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility consist of the following:

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
Fuel Burning Equipment							
8-01	Boiler 1S – 2S	B&W Sterling coal-fired boiler	82.6 x 10^6 BTU/hr	Belco Pollution Control Model 30 hot dry ESP	Boiler 1SA – 2SA	Particulate	4/2/84 (PSD permit) (reissued 6/18/01)
8-02	Boiler 1S – 2S	B&W Sterling coal-fired boiler	82.6 x 10^6 BTU/hr	Belco Pollution Control Model 30 hot dry ESP	Boiler 1SA – 2SA	Particulate	4/2/84 (PSD permit) (reissued 6/18/01)
8-03	Boiler 1S – 2S	B&W Sterling coal-fired boiler	82.6 x 10^6 BTU/hr	Belco Pollution Control Model 30 hot dry ESP	Boiler 1SA – 2SA	Particulate	4/2/84 (PSD permit) (reissued 6/18/01)
8-04	Boiler 1S – 2S	Zurn Energy spreader stoker coal-fired boiler	82.6 x 10^6 BTU/hr	Belco Pollution Control Model 30 hot dry ESP	Boiler 1SA – 2SA	Particulate	4/2/84 (PSD permit) (reissued 6/18/01)
29-02 (see also under Locomotive Shop, below)	29-02S	Locomotive Shop - Bayco natural-gas fired oven, Model BB 413 burnoff oven	2.91 x 10^6 BTU/hr	Bayco H13 burner	29-02A	Particulate	5/20/98
43-03 (see also under Car Shop, below)	Unknown	Blacksmith Shop - 15 open-front oil-fired metal heating furnaces	2.7 x 10^6 BTU/hr (each); 40.5 x 10^6 BTU/hr (total)	-	-	-	-

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
Process A – Car Shop							
37-01	37-01S	Prep Building – Wheelabrator Frye blasting booth	2.1 MCF air/hr output	Cyclone followed by Vacublast J3091 shaker baghouse	37-01B	Particulate	1/26/99
37-04	37-04S	Prep Building – enclosed area used for painting rail cars	Unknown	Closed room (60'L x 25'W x 20'H)	Unknown	Particulate	-
41-01	41-01S	New Paint Shop – Wheelabrator Frye Model 171 shot blast booth	2 railcars/hr output	Wheelabrator Frye Model 171 shaker baghouse	41-01B	Particulate	6/30/95, as amended 1/19/96 & 6/14/01
41-02	41-02 1S-6S	New Paint Shop – DeVilbiss paint booth	29 gal/hr output	DeVilbiss water curtain	NA	Particulate	6/30/95, as amended 1/19/96 & 6/14/01
41-04	Unknown	New Paint Shop – Stencil area	7 gal/hr output	-	-	-	6/30/95, as amended 1/19/96 & 6/14/01
41-05	Unknown	New Paint Shop – Cleaning and Purging Operations	Unknown	-	-	-	6/30/95, as amended 1/19/96 & 6/14/01
42-04	42-04S	Maintenance Building – Binks 10'-0" Andreae filter booth, floor type, Model PFA-10-10T-LH	10.2 gal/hr input using 0.013 tip	-	-	-	3/10/98 as amended 6/13/01
43-03 (see also under Fuel Burning Equipment, above)	Unknown	Blacksmith Shop – 15 open-front, metal heating furnaces, each with 2.7 x 10^6 BTU/hr oil burner	40.5 x 10^6 BTU/hr (total); process rate unknown	-	-	-	-
51-01	51-01S	Foundry – Pattern Shop - Binks spray booth	0.92 gal/hr input	Paper filter	Unknown	Particulate	12/18/98

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
Process A – Car Shop (continued)							
51-08	51-08S	Foundry – New sand unloading, storage & transfer – Contech Dense Air Conveyor, Model 301-768-6037, and 100 ton storage hopper	1.9 tons/hr input	Carborundum Environmental Systems, Model 540 HP 1015 TWS pulse-jet baghouse	51-08B	Particulate	5/4/98 as amended 7/16/03
51-09	51-08S	Foundry – Sand reclamation system – Hewitt-Robins 6 x 8 deck shaker, Hewitt-Robins 6 x 8 ball mill crusher and attrition mill, 50 ton feeding hopper, 200 ton storage hopper,	9.45 tons/hr input	Carborundum Environmental Systems, Model 540 HP 1015 TWS pulse-jet baghouse	51-08B	Particulate	5/4/98 as amended 7/16/03
51-10	Unknown	Foundry – Casting shakeout using mold shaker	3.75 tons/hr input	Fabric filters	Unknown	Particulate	5/4/98 as amended 7/16/03
51-11	51-11S	Foundry – Wheelabrator 550 shot blast machine	13,250 cu. ft/hr	Wheelabrator Frye Jet III pulse-jet baghouse	51-11B	Particulate	5/8/98
51-12	Unknown	Foundry - Lime hopper	0.38 tons/hr input	-	-	-	-
51-13/14	Unknown	Foundry – 13 ton capacity electric arc furnace (melting, charging, tapping & slagging) with 3 carbon electrodes	6.5 tons/hr input	-	-	-	-
51-15	Unknown	Foundry – Pouring and casting	5 tons/hr output	-	-	-	-
51-16	Unknown	Foundry – Charge handling	5 tons/hr output	-	-	-	-

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
Process A – Car Shop (continued)							
51-17	Unknown	Foundry – Castings cooling	5 tons/hr output	-	-	-	-
51-19	Unknown	Foundry – Continuous Sand Mixer (large) – CE Cast Industrial Products N&W #8761	28.5 tons/hr input	Fabric filters	Unknown	Particulate	5/4/98 as amended 7/16/03
51-20	Unknown	Foundry – Continuous Sand Mixer (small) – CE Cast Industrial Products N&W #9717	16.5 tons/hr input	Fabric filters	Unknown	Particulate	5/4/98 as amended 7/16/03
59-04	Unknown	Bolster Reclamation Shop – Ring and gib welding using 3/32 innershield NS-3M wire and 309L-GSF16 stainless wire	52,000 lbs rods/yr input	-	-	-	-
Process B – Locomotive Shop							
8-05 (Ash)	8-05A-S 8-05B-S	Ash handling system	3.33 tons/hr	Cyclone; 82 bag pulse-jet baghouse followed by Mikro-Pulsaire Model 88 pulse-jet baghouse; wet suppression when bins removed	08-05A 08-05B	Particulate	-
9-01	Unknown	Coal unloading	10.77 tons/hr input	-	-	-	-
9-02	Unknown	Coal transfer and handling	10.77 tons/hr input	-	-	-	-

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
Process B – Locomotive Shop (continued)							
28-01	Unknown	Fabrication and Tin Shop – General welding – Lincoln 7018, E3081, 3/32 Jetweld LH-70, Hobart 418 rods	40 lbs rods/hr input	-	-	-	-
29-01	29-01S	Locomotive Shop – DeVilbiss Paint Arrestor Type Paint Booth, Model #DL-L-1689-100	4.21 gal/hr input	Corrugated paper filter	Unknown	Particulate	9/27/99 as amended 6/15/01
29-02 (see also under Fuel Burning Equipment, above)	29-02S	Locomotive Shop - Bayco Model BB 413 burnoff oven	5.4 lb/hr waste input	Bayco H13 burner	29-02A	Particulate	5/20/98
29-06	29-06S	Locomotive Shop – Blast Cleaning Products (BCP) shot blast machine	2.4×10^5 cu. ft. of air/hr output	BCP pulse-jet baghouse	29-06B	Particulate	2/27/98
Process C – Signal Shop							
67-02	67-02S	Signal Shop – DeVilbiss bench top spray booth	0.39 gal/hr input	Paper filter	Unknown	Particulate	-

*The Size/Rated capacity is provided for informational purposes only, and is not an applicable requirement.

EMISSIONS INVENTORY

Emissions summarized in the following table are derived from the 1999 emission inventory report. A copy of the report is attached as Attachment A.

1999 Pollutant Emissions (Plantwide Total)	
Pollutant	Tons Emitted
Criteria Pollutants	
PM	43.89
PM10	39.71
VOC	47.76
NO_X	154.97
SO_2	378.19
CO	56.54
Lead	0.01

EMISSION UNIT APPLICABLE REQUIREMENTS - Boilers 1, 2, 3 and 4

Limitations

The following Title V applicable limitations are BACT requirements from the PSD permit issued on April 2, 1984 to construct and operate Boiler 4 (reissued 6/18/01). A copy of the permit is attached as Attachment B.

- Condition III.A.1, specifying coal as the approved fuel.
- Condition III.A.2, requiring particulate emissions to be controlled by electrostatic precipitators.
- Condition II.A.3, specifying fugitive dust control measures.
- Condition III.A.4, limiting boiler house input to 210,000 lb/hr steam and maximum design capacity of the boiler house to 247.8 x 10^6 BTU/hr.
- Condition III.A.5, limiting coal ash content to an annual average of 20 percent.

- Condition III.A.6, limiting the sulfur content of the coal to 1.5 percent and the annual average to 1.0 percent, and specifying that if coal for spreader stoker fuel with an annual average sulfur content of 1.0 percent becomes unavailable in this area, the annual average sulfur content may increase to no more than 1.25 percent.

- Condition III.A.7, limiting the sulfur content of the four-week rolling average to 1.25 percent and the sulfur content of any individual weekly analysis to 1.5 percent.

- Condition III.A.8, limiting emissions as follows:

  - Particulate Matter: 56.5 lbs/hr, 0.228 lbs/million BTU input hourly emission limit

  - PM-10: 56.5 lbs/hr, 0.228 lbs/million BTU input hourly emission limit

  - Sulfur Dioxide: 523.1 lbs/hr, 2.11 lbs/million BTU input hourly emission limit

- Condition III.A.9, limiting visible emissions to 20% / 30%,

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

- 9 VAC 5-80-110, Federal Operating Permits for Stationary Sources (specifying air pollution control equipment, approved fuels, and operation and maintenance of equipment)

- 9 VAC 5-50-80 and 5-50-940, New Source Standard for Visible Emissions

Monitoring

9 VAC 5-50-50 requires that records of all emissions data and operating parameters necessary to demonstrate compliance with the permit be maintained. The monitoring and recordkeeping requirements of the NSR permit have been modified to meet Part 70 requirements. (See Recordkeeping, below.)

Recordkeeping

The permit includes requirements for maintaining records of all monitoring and testing required by the permit. These records include monthly and annual throughput of coal (in tons); the steam output of the boiler house; the results of the fuel sulfur content analyses; all fuel supplier certifications; and the annual emissions of sulfur dioxide, calculated monthly as the sum of each consecutive twelve (12) month period.

Testing

The permit required initial performance tests which were conducted in April 1985 and therefore are no longer required. A table of test methods has been included in the permit if further testing is performed. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Streamlined Requirements

Conditions in the 1984 PSD (reissued 6/18/01) permit regarding initial performance testing, notification and reporting have not been included as these requirements have already been fulfilled (see "Testing" section, above).

EMISSION UNIT APPLICABLE REQUIREMENTS - 43-03 (15 open-front oil-fired metal heating furnaces)

Limitations

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

- 9 VAC 5-80-110, Federal Operating Permits for Stationary Sources (specifying air pollution control equipment, approved fuels, and operation and maintenance of equipment)

- 9 VAC 5-40-80 and 5-40-940, Existing Source Standard for Visible Emissions

- 9 VAC 5-40-900, Emission Standards for Fuel Burning Equipment (standard for particulate matter). Allowable emissions, in pounds of particulate per million BTU input, are calculated using the following formula:

  Maximum Allowable Emission Ratio (E) = $1.0906H^{-0.2594}$

  where H is the total capacity of all fuel burning units at a stationary source in millions of BTU per hour. The total capacity at 100% use load was established in a DEQ letter to Norfolk & Western dated 2/5/1980, but did not include these metal heating furnaces. Instead, it was based upon Boilers 1, 2 and 3, which were subsequently limited under more stringent BACT requirements (along with Boiler 4) in the 1984 PSD permit. Therefore, the particulate standard for these metal heating furnaces is as follows:

  $E = 1.0906 \times (15 \times 2.7)^{-0.2594} = 0.4175$ lbs/mmBTU input

  Allowable particulate emissions are the product of the emission ratio E and the allowable heat input in mmBTU/hr. Therefore:

Maximum Allowable Emissions = 0.4175 x 40.5 = 16.91 lbs/hr (total)

- 9 VAC 5-40-930, Emission Standards for Fuel Burning Equipment (standard for sulfur dioxide). Allowable emissions, in pounds of sulfur dioxide per hour, are calculated using the following formula:

  Maximum Allowable Emissions (S) = 2.64K

where K is the allowable heat input at total capacity in mmBTU/hr. Therefore:

S = 2.64 x 40.5 = 106.92 lbs/hr (total)

Monitoring and Recordkeeping

9 VAC 5-40-50 requires that records of all emissions data and operating parameters necessary to demonstrate compliance with the permit be maintained.

Testing

The permit does not require source tests. A table of test methods has been included in the permit if testing is performed. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

NA

Streamlined Requirements

NA

EMISSION UNIT APPLICABLE REQUIREMENTS – Car Shop

Limitations
The following Title V applicable limitations are BACT requirements from the minor NSR permit issued on 6/30/95, as amended on 1/19/96 & 6/14/01, to construct and operate Units 41-01, 41-02, 41-04 and 41-05. A copy of the permit is attached as Attachment B.

- Condition V.A.2, requiring particulate emissions from the shot blast booth (41-01) to be controlled by a baghouse.

- Condition V.A.3, requiring particulate emissions from the spray booth (41-02) to be controlled by a water curtain.

- Condition V.A.9, requiring VOC emissions from the spray booth (41-02) to be controlled by use of high-solids coatings and airless spray guns.

- Condition V.A.10, requiring VOC emissions from cleaning or purging operations (41-05) to be minimized by adjustment of production schedules to minimize coating changes.

- Condition V.A.13, limiting VOC emissions from use of all coatings in the spray booth to 2.8 lb VOC/gal as a monthly average.

- Condition V.A.14, limiting VOC throughput for the spray booth and stencil painting area to 88.15 tons per year, calculated monthly as the sum of each consecutive twelve (12) month period.

- Condition V.A.22, limiting visible emissions from the spray booth and shot blast booth to five (5) percent opacity, except during one six-minute period in any one hour in which visible emissions shall not exceed thirty (30) percent opacity.

- Condition V.A.28, limiting emissions from the spray booth as follows:

  - Particulate Matter: 51.9 lbs/hr, 75.5 lbs/day, 12.5 tons/yr
  - PM-10: 38.9 lbs/hr, 75.5 lbs/day, 9.4 tons/yr
  - VOCs: 168.0 lbs/hr, 84.0 tons/yr

- Condition V.A.29, limiting emissions from the stencil painting area and cleaning operations as follows:

  - Particulate Matter: 2.6 lbs/hr, 3.5 tons/yr
  - PM-10: 2.0 lbs/hr, 2.6 tons/yr
  - VOCs: 2.6 lbs/hr, 4.15 tons/yr

- Condition V.A.27, limiting emissions from the shot blast booth as follows:

  - Particulate Matter: 1.7 lbs/hr, 3.4 tons/yr
  - PM-10: 1.3 lbs/hr, 3.4 tons/yr

The following Title V applicable limitations are BACT requirements from the minor NSR permit issued on 3/10/98 to construct and operate a spray booth (42-04). A copy of the permit is attached as Attachment B.

- Condition V.A.4, requiring particulate emissions from the spray booth (42-04) to be controlled by pocket filters.

- Condition V.A.30, limiting emissions from the spray booth as follows:

  - Particulate Matter: 57.5 lbs/hr, 4.95 tons/yr
  - PM-10: 57.5 lbs/hr, 4.95 tons/yr

The following Title V applicable limitations are BACT requirements from the minor NSR permit issued on 5/4/98 as amended 7/16/03 to construct and operate a sand handling and mold making operation (51-08, 51-09, 51-10, 51-19, 51-20). A copy of the permit is attached as Attachment B.

- Condition V.A.6, requiring particulate emissions from all but the storage bin vents for exhausts (51-08, 51-09, 51-10, 51-19, 51-20) to be controlled by fabric filters.

- Condition V.A.15, limiting the annual throughput of ceramic facing to 37,500 gallons, calculated monthly as the sum of each consecutive twelve (12) month period.

- Condition V.A.16, limiting the annual throughput of molding catalyst to 53,900 gallons, calculated monthly as the sum of each consecutive twelve (12) month period.

- Condition V.A.17, limiting the annual throughput of molding binder to 218,000 gallons, calculated monthly as the sum of each consecutive twelve (12) month period.

- Condition V.A.18, limiting the annual throughput of sand to 68,100 tons, calculated monthly as the sum of each consecutive twelve (12) month period.

- Condition V.A.24, limiting visible emissions from the sand handling and mold making operations (51-08, 51-09, 51-10, 51-19, 51-20) to five (5) percent opacity, except during one six-minute period in any one hour in which visible emissions shall not exceed thirty (30) percent opacity.

- Condition V.A.32, limiting emissions from sand handling and mold making operations (51-08, 51-09, 51-10, 51-19, 51-20) as follows:

  - Particulate Matter: 9.17 lbs/hr, 30.2 tons/yr
  - PM-10: 3.54 lbs/hr, 10.5 tons/yr
  - VOCs: 10.6 lbs/hr, 43.6 tons/yr

The following Title V applicable limitations are BACT requirements from the minor NSR permit issued on 5/8/98 to construct and operate a shot blast booth (51-11). A copy of the permit is attached as Attachment B.

- Condition V.A.8, requiring particulate emissions to be controlled by a fabric filter pulse jet dust collector.

- Condition V.A.11, requiring the shot blast booth (51-11) to be operated at a negative pressure of 0.10 psia relative to the ambient air at all times when the blast machine is in operation.

- Condition V.A.12, requiring that the disposal of collected particulate from the shot blast booth (51-11) be performed in a manner which minimizes the introduction of air contaminants to the ambient air.

- Condition V.A.25, limiting visible emissions from the shot blast booth (51-11) to ten percent (10%) opacity, except during one six-minute period in any one hour in which visible emissions shall not exceed thirty percent (30%) opacity.

- Condition V.A.33, limiting emissions from the shot blast booth (51-11) as follows:

  - Particulate Matter: 0.020 gr/dscf, 2.27 lbs/hr, 9.95 tons/yr

The following Title V applicable limitations are BACT requirements from the minor NSR permit issued on 12/18/98 to construct and operate a spray booth (51-01). A copy of the permit is attached as Attachment B.

- Condition V.A.5, requiring particulate emissions from the spray booth to be controlled by corrugated paper filters.

- Condition V.A.19, limiting the monthly throughput of coatings to 100 gallons

- Condition V.A.23, limiting visible emissions from spray booth (51-01) to five (5) percent opacity, except during one six-minute period in any one hour in which visible emissions shall not exceed thirty (30) percent opacity.
- Condition V.A.31, limiting emissions from spray booth (51-01) as follows:

  - VOCs: 6.05 lbs/hr, 3.95 tons/yr

The following Title V applicable limitations are BACT requirements from the minor NSR permit issued on 1/26/99 to construct and operate a shot blast booth (37-01). A copy of the permit is attached as Attachment B.

- Condition V.A.1, requiring particulate emissions from the shot blast machine to be controlled by a cyclone followed by a fabric filter.

- Condition V.A.12, requiring that the disposal of collected particulate from the shot blast booth (37-01) be performed in a manner which minimizes the introduction of air contaminants to the ambient air.

- Condition V.A.20, limiting visible emissions to twenty (20) percent opacity, except during one six-minute period in any one hour in which visible emissions shall not exceed thirty (30) percent opacity.

- Condition V.A.26, limiting emissions as follows:

  - Particulate Matter: 0.020 gra/dscf, 5.88 lbs/hr, 25.75 tons/yr

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

- 9 VAC 5-80-110, Federal Operating Permits for Stationary Sources (specifying air pollution control equipment, approved fuels, and operation and maintenance of equipment)

- 9 VAC 5-50-80 and 5-50-940, New Source Standard for Visible Emissions

Monitoring

9 VAC 5-50-50 requires that records of all emissions data and operating parameters necessary to demonstrate compliance with the permit be maintained. (See Recordkeeping, below.)

Recordkeeping

The permit includes requirements for maintaining records of all monitoring and testing required by the permit. These records include monthly and annual throughput (in gallons) of coatings, solvents, thinners and adhesives at each spray booth; monthly and annual throughput of sand, binder, catalyst and facing; average monthly VOC emissions (in pounds/gallon) from each spray booth; monthly and annual VOC emissions (in pounds) from each spray booth; the number of hours of operation of each spray booth; and the number of rail cars painted at the facility, calculated monthly as the sum of each consecutive twelve (12) month period.

Testing

The permit does not require source tests. A table of test methods has been included in the permit if testing is performed. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

NA

Streamlined Requirements

NA

EMISSION UNIT APPLICABLE REQUIREMENTS – Locomotive Shop

Limitations

The following Title V applicable limitations are BACT requirements from the minor NSR permit issued on 2/27/98 to construct and operate a shot blast booth (29-06). A copy of the permit is attached as Attachment B.

- Condition VI.A.3, requiring particulate emissions to be controlled by a cartridge filter dust collector.

- Condition VI.A.12, specifying that the disposal of collected particulate from the shot blast booth shall be performed in a manner which minimizes the introduction of air contaminants to the ambient air.

- Condition VI.A.18, limiting visible emissions to ten (10) percent opacity, except during one six-minute period in any one hour in which visible emissions shall not exceed thirty (30) percent opacity.

- Condition VI.A.24, limiting emissions from the shot blast booth as follows:

  - Particulate Matter: 0.020 gr/dscf, 0.68 lbs/hr, 2.97 tons/yr

The following Title V applicable limitations are BACT requirements from the minor NSR permit issued on 5/20/98 to construct and operate an incinerator (29-02). A copy of the permit is attached as Attachment B.

- Condition VI.A.1, specifying natural gas as the approved fuel.

- Condition VI.A.6, requiring the primary and secondary chambers of the incinerator to be equipped with continuous temperature sensors at or near the chamber exits to indicate the temperatures in each chamber.

- Condition VI.A.7, specifying that the minimum primary and secondary chamber temperatures shall be maintained at 750 °F and 1200 °F, respectively, when the incinerator (29-02) is in operation, except for momentary dips when feeding a load of waste.

- Condition VI.A.8, requiring the incinerator to be equipped with automatic thermostats to maintain the minimum primary and secondary chamber temperatures.

- Condition VI.A.9, specifying that the incinerator shall remain in operation until such time that no combustible materials are left on the hearth.

- Condition VI.A.10, specifying that the burn-down cycle of the incinerator shall be automatically controlled and the minimum burn-down cycle time shall be eight (8) hours.

- Condition VI.A.11, specifying that the incinerator (29-02) shall be charged with no more than eighteen (18) jackets per cycle, and operated for no more than three (3) cycles per day.

- Condition VI.A.17, limiting visible emissions to five (5) percent opacity, except during one six-minute period in any one hour in which visible emissions shall not exceed thirty (30) percent opacity.

- Condition VI.A.23, limiting emissions from the incinerator as follows:

  - Particulate Matter: 0.10 gr/dscf @ 12% CO_2
  - PM-10: 0.10 gr/dscf @ 12% CO_2
  - Nitrogen Oxides: 1.7 tons/yr

The following Title V applicable limitations are BACT requirements from the minor NSR permit issued on 9/27/99 (as amended 6/15/01) to construct and operate a spray booth (29-01). A copy of the permit is attached as Attachment B.

- Condition VI.A.2, requiring particulate emissions to be controlled by mat filters.

- Condition VI.A.4, requiring VOC emissions to be minimized by adjustment of production schedules to minimize coating changes.

- Condition VI.A.5, requiring VOC emissions from cleaning or purging operations to be minimized by keeping the lid on the container holding the cleaner when the cleaning container is not in use.

- Condition VI.A.13, limiting the annual throughput of coatings to 3,745 gallons, calculated monthly as the sum of each consecutive twelve (12) month period.

- Condition VI.A.14, limiting VOC throughput to 18 tons per year, calculated monthly as the sum of each consecutive twelve (12) month period.

- Condition VI.A.16, limiting visible emissions to five (5) percent opacity, except during one six-minute period in any one hour in which visible emissions shall not exceed ten (10) percent opacity.

- Condition VI.A.22, limiting emissions from the spray booth (29-01) as follows:

  - VOCs: 31.0 lbs/hr, 18.0 tons/yr

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

- 9 VAC 5-80-110, Federal Operating Permits for Stationary Sources (specifying air pollution control equipment, approved fuels, and operation and maintenance of equipment)

- 9 VAC 5-50-80 and 5-50-940, New Source Standard for Visible Emissions

Monitoring

9 VAC 5-50-50 requires that records of all emissions data and operating parameters necessary to demonstrate compliance with the permit be maintained. (See Recordkeeping, below.)

Recordkeeping

The permit includes requirements for maintaining records of all monitoring and testing required by the permit. These records include monthly and annual throughput of steel jackets to the incinerator; monthly and annual throughput of natural gas to the incinerator; monthly and annual throughput (in gallons) of coatings, solvents, thinners and adhesives at each spray booth; monthly and annual VOC emissions (in pounds) from each spray booth; and the number of hours of operation of each spray booth.

Testing

The permit does not require source tests. A table of test methods has been included in the permit if testing is performed. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

NA

Streamlined Requirements

NA

EMISSION UNIT APPLICABLE REQUIREMENTS – Signal Shop

Limitations

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

- 9 VAC 5-80-110, Federal Operating Permits for Stationary Sources (specifying air pollution control equipment, approved fuels, and operation and maintenance of equipment)

- 9 VAC 5-50-80 and 5-50-940, New Source Standard for Visible Emissions

Monitoring and Recordkeeping

9 VAC 5-50-50 requires that records of all emissions data and operating parameters necessary to demonstrate compliance with the permit be maintained.

Testing

The permit does not require source tests. A table of test methods has been included in the permit if testing is performed. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

NA

Streamlined Requirements

NA

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110, that apply to all Federal operating permit sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions, including those caused by upsets, within one business day.

Streamlined Conditions – General

Comments on General Conditions

OPACITY Exclusion:

The startup, shut down, and malfunction opacity exclusion listed in 9 VAC 5-40-20 A 3 cannot be included in any Title V permit. This portion of the regulation is not part of the federally approved state implementation plan. The opacity standard applies to existing sources at all times including startup, shutdown, and malfunction. Opacity exceedances during malfunction can be affirmatively defended provided all requirements of the affirmative defense section of this permit are met. Opacity exceedances during startup and shut down will be reviewed with enforcement discretion using the requirements of 9 VAC 5-40-20 E, which state that "At all times, including periods of startup, shutdown, soot blowing and malfunction, owners shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with air pollution control practices for minimizing emissions."

Condition XII.B.: Permit Expiration

This condition refers to the Board taking action on a permit application. The Board referred to is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §§2.1-20.01:2 and §§10.1-1185 of the *Code of Virginia,* and the "Department of Environmental Quality Agency Policy Statement NO. 3-2001".

This general conditions cites the entire Article(s) that follow:
B.2. Article 1 (9 VAC 5-80-50 et seq.), Part II of 9 VAC 5 Chapter 80.
Federal Permits for Stationary Sources
B.3. Article 1 (9 VAC 5-80-50 et seq.), Part II of 9 VAC 5 Chapter 80.
Federal Permits for Stationary Sources

This general condition cites the sections that follow:
B. 9 VAC 5-80-80. "Application"
B.2. 9 VAC 5-80-150. "Action on Permit Applications"
B.3. 9 VAC 5-80-80. "Application"
B.4. 9 VAC 5-80-80. "Application"

B.4. 9 VAC 5-80-140. "Permit shield"
B.5. 9 VAC 5-80-80. "Application"

Condition XII . F.: Failure/Malfunction Reporting

Section 9 VAC 5-20-180 requires malfunction and excesses emissions reporting within 4 hours. Section 9 VAC 5-80-250 also requires malfunction reporting; however, reporting is required within 2 days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to this section including Title 5 facilities. Section 9 VAC 5-80-250 is from the Title 5 regulations. Title 5 facilities are subject to both Sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within 4 day time business hours of the malfunction.

Please note there are proposed regulation changes that could affect this condition. The requirement listed in section 9 VAC 5-20-180 to report excesses emissions within 4 business hours may be changed to require reporting of excess emissions within 6 hours. The requirement listed in section 9 VAC 5-40-50 C and 9 VAC 5-50-50 C to submit a written report of excess emissions on a quarterly may be changed to allow semiannual reporting.

In order for emission units to be relieved from the requirement to make a written report in 14 days the emission units must have continuous monitors and the continuous monitors must meet the requirements of 9 VAC 5-50-410 or 9 VAC 5-40-41.

This general condition cites the sections that follow:

F.	9 VAC 5-40-50.	Notification, Records and Reporting
F.	9 VAC 5-50-50.	Notification, Records and Reporting
F.1.	9 VAC 5-40-50.	Notification, Records and Reporting
F.1.	9 VAC 5-50-50.	Notification, Records and Reporting
F.2.	9 VAC 5-40-50.	Notification, Records and Reporting
F.2.	9 VAC 5-50-50.	Notification, Records and Reporting
F.3.	9 VAC 5-40-50.	Notification, Records and Reporting
F.3.	9 VAC 5-40-41.	Emissions Monitoring Procedures for Existing Sources
F.3.a.	9 VAC 5-40-41.	Emissions Monitoring Procedures for Existing Sources

Condition XII.H.: Malfunction as an Affirmative Defense

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in section 9 VAC 5-80-250 and 9 VAC 5-20-180. The malfunction requirements are listed in General Condition U and General Condition F. For further explanation see the comments on general condition F.

This general condition cites the sections that follow:

H.2.d. 9 VAC 5-80-110. Permit Content
H.2.d. 9 VAC 5-20-180. Facility and Control Equipment Maintenance or Malfunction

STATE ONLY APPLICABLE REQUIREMENTS

The following Virginia Administrative Codes have specific requirements only enforceable by the State:

- 9 VAC 5-50-180, Standard for Toxic Pollutants
- 9 VAC 5-50-200, Submittal of Information

FUTURE APPLICABLE REQUIREMENTS

40 CFR Part 63 – Subpart EEEEE – National Emission Standards for Iron and Steel Foundries (MACT), Proposed 12/23/02 (67 FR 78274)

EPA is in the process as of this writing (10/03) in considering an annual production cutoff for area source applicability

INAPPLICABLE REQUIREMENTS

Currently inapplicable requirements identified by the applicant include limits and requirements pertaining to Unit Ref. #41-03 (New Paint Shop – drying booth) within the 6/30/95 permit, as amended 1/19/96 & 6/14/01. Drying now takes place with steam heat rather than a natural gas-fired dryer; references to "dryer" are therefore being removed from permit due to negligible emissions from drying.

COMPLIANCE PLAN

NA

INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
	Powerhouse – small shot blaster	9 VAC 5-80-720A	PM, PM-10	
	Powerhouse – Parts Cleaner	9 VAC 5-80-720A	VOC	
	Powerhouse – Diesel Generator	9 VAC 5-80-720A	NOx	1000 kW
54-01	Freight Car Shop – general welding	9 VAC 5-80-720A	PM, PM-10	
54-02	Freight Car Shop – grinding machines	9 VAC 5-80-720B	PM, PM-10	
54-03	Freight Car Shop – plasma arc cutter	9 VAC 5-80-720B	PM, PM-10	
54-04	Freight Car Shop – air arc welding	9 VAC 5-80-720B	PM, PM-10, HAPs	
55-01	Freight Car Shop – planing mill	9 VAC 5-80-720B	PM, PM-10	
41-03	New Paint Shop – drying booth (steam heat)	9 VAC 5-80-720C	VOC	NA
Bldg 41	New Paint Shop – small parts degreaser	9 VAC 5-80-720 A, B	VOC	
Passenger Car Shop	12 gal parts washer	9 VAC 5-80-720A	VOC	
Passenger Car Shop	34 gal parts washer	9 VAC 5-80-720A	VOC	
Bldg 43	Blacksmith Shop – alkaline cleaners (2)	9 VAC 5-80-720B	NA	
43-02	Blacksmith Shop –natural gas fired rivet mill furnace	9 VAC 5-80-720C		4.69×10^6 BTU/hr
	Blacksmith Shop – Diesel Storage Tank	9 VAC 5-80-720A	VOC	15,000 Gallon
50-01	Old Paint Shop – parts washer	9 VAC 5-80-720 A, B	NA	

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
50-02	Old Paint Shop – 35 gal parts washer	9 VAC 5-80-720 A, B	VOC	
50-03	Old Paint Shop – misc. painting	9 VAC 5-80-720 A, B	VOC	
51-02	Foundry – natural gas-fired annealing oven – Therm-Craft, Model 20-8-5-1Z-GF	9 VAC 5-80-720C		7 burners @ 1 x 10^6 BTU/hr each
51-03	Foundry – natural gas-fired core oven	9 VAC 5-80-720C		3 x 10^6 BTU/hr
51-04	Foundry – Tank 1 - molding binder tank (furfuryl alcohol)	9 VAC 5-80-720B	VOC, HAPs	
51-05	Foundry – Tank 2 -toluene sulfonic acid catalyst tank	9 VAC 5-80-720B	VOC, HAPs	
51-18	Foundry – natural gas-fired flame hardening system – Wisconsin Oven Corp., Model SN 030579206	9 VAC 5-80-720C		6 x 10^6 BTU/hr
	Foundry – Small Shot Blasters (2)	9 VAC 5-80-720A	PM, PM-10	
	Foundry – parts Cleaner (Selig)	9 VAC 5-80-720A	VOC	
	Car Shop (Planning Mill) small shot blaster	9 VAC 5-80-720A	PM, PM-10	
	Car Shop (Reclamation) (2) small shot blasters	9 VAC 5-80-720A	PM, PM-10	
	Car Shop (Reclamation) (3) Parts Cleaners	9 VAC 5-80-720A	VOC	
	Car Shop (Reclamation) (3) Mart Parts Washers	9 VAC 5-80-720A	VOC	
	Car Shop (Passenger Car) Cuda Aqueous Parts Washer	9 VAC 5-80-720A	N/A	
1C	Car Shop - car oil tank	9 VAC 5-80-720C		8000 gal
2C	Car Shop - car oil tank	9 VAC 5-80-720C		8000 gal
3C	Car Shop - car oil tank	9 VAC 5-80-720C		8000 gal
5C	Car Shop – petroleum product tank < 1000 gallons	9 VAC 5-80-720A		

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
6C	Car Shop – petroleum product tank < 1000 gallons	9 VAC 5-80-720A		
12C	Car Shop – petroleum product tank < 1000 gallons	9 VAC 5-80-720A		
29C	Car Shop – petroleum product tank < 1000 gallons	9 VAC 5-80-720A	VOC	
30C	Car Shop – petroleum product tank < 1000 gallons	9 VAC 5-80-720A	VOC	
59-05	Locomotive Shop – general welding	9 VAC 5-80-720B	PM, PM-10	
Bldg 29	Locomotive Shop – steam drying ovens (2)	9 VAC 5-80-720A		
Bldg 29	Locomotive Shop –1800 gal Proceco (conveyor) washer	9 VAC 5-80-720A	VOC	
Bldg 29	Locomotive Shop – 1525 gal Stoelting (conveyor) washer	9 VAC 5-80-720A	VOC	
Bldg 29	Locomotive Shop – 500 gal Aja Lif (agitator) washer	9 VAC 5-80-720A	VOC	
Bldg 29	Locomotive Shop – 380 gal Mart washers (2)	9 VAC 5-80-720A	VOC	
Bldg 29	Locomotive Shop – 490 gal Aja Lif washers (2)	9 VAC 5-80-720A	VOC	
Bldg 29	Locomotive Shop – 170 gal Mart washers (2)	9 VAC 5-80-720A	VOC	
Bldg 29	Locomotive Shop – Parts Cleaners (Selig) (20)	9 VAC 5-80-720A	VOC	
Bldg 29	Small Shot Blasters (4)	9 VAC 5-80-720A	PM, PM-10	
Bldg 29	Locomotive Shop – Scrub Room – wand cleaner	9 VAC 5-80-720A		
1L	Locomotive Shop – used oil tank	9 VAC 5-80-720C		550 gal
2L	Locomotive Shop – engine lube oil tank	9 VAC 5-80-720B	VOC	
3L	Locomotive Shop – engine lube oil tank	9 VAC 5-80-720B	VOC	

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
4L	Locomotive Shop – Regal R&O 32 tank	9 VAC 5-80-720C		550 gal
5L	Locomotive Shop – diesel fuel tank	9 VAC 5-80-720C		500 gal
6L	Locomotive Shop – air compressed oil tank	9 VAC 5-80-720C		550 gal
7L	Locomotive Shop – air compressed oil tank	9 VAC 5-80-720C		550 gal
8L	Locomotive Shop – diesel fuel tank	9 VAC 5-80-720C		500 gal
9L	Locomotive Shop – used oil tank	9 VAC 5-80-720B	VOC	
10L	Locomotive Shop – air compressed oil tank	9 VAC 5-80-720C		400 gal
11L	Locomotive Shop – used oil tank	9 VAC 5-80-720B	VOC	
12L	Locomotive Shop – diesel fuel tank	9 VAC 5-80-720B	VOC	
13L	Locomotive Shop – gasoline tank	9 VAC 5-80-720C		500 gal
H	Locomotive Shop – Polymar 607 tank	9 VAC 5-80-720C		500 gal
P	Locomotive Shop – F.O. 2223 tank	9 VAC 5-80-720C		500 gal
F	Locomotive Shop – F.O. 537 tank	9 VAC 5-80-720C		500 gal
C	Locomotive Shop – BP 5229 tank	9 VAC 5-80-720C		500 gal
Bldg 28	Fabrication Shop – load testing East End	9 VAC 5-80-720A		
Bldg 28	Fabrication Shop – load testing West End	9 VAC 5-80-720A		
28-02	Fabrication Shop – plasma burning table	9 VAC 5-80-720B	PM, PM-10	
Bldg 29	Locomotive Shop – sanding tables (2)	9 VAC 5-80-720B	PM, PM-10	
Bldg 29	Locomotive Shop – sanding/polishing booth	9 VAC 5-80-720B	PM, PM-10	

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
Bldg 29	Locomotive Shop – brick saw	9 VAC 5-80-720B	PM, PM-10	
Bldg 29	Locomotive Shop – OSI electric drying oven	9 VAC 5-80-720A		
Bldg 67	Signal Shop – Emergency Generator	9 VAC 5-80-720A	NOx	115 KW
Bldg 67	Signal Shop – shot blaster	9 VAC 5-80-720B	PM, PM-10	
Bldg 67	Signal Shop – general welding	9 VAC 5-80-720A		
Bldg 67	Signal Shop – dip tank	9 VAC 5-80-720C		500+ gal
67-01	Signal Shop – old paint booth #1	9 VAC 5-80-720B	PM, PM-10, VOC, HAPs	
67-03	Signal Shop – Safety Kleen parts washer	9 VAC 5-80-720A		

[1]The citation criteria for insignificant activities are as follows:
9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application
9 VAC 5-80-720 B - Insignificant due to emission levels
9 VAC 5-80-720 C - Insignificant due to size or production rate

CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

PUBLIC PARTICIPATION

A public notice appeared in the Roanoke Times and World-News on Sunday, August 17, 2003 announcing a 30-day public comment period for this permit. The public comment period extended until September 17, 2003, with no comments received. The U. S. Environmental Protection Agency concurrently reviewed the draft, with its review period extending until October 1, 2003, with no comments received.